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CLAIMS

We claim:

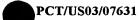
- 1. A process for treating gas, water, or soil containing heavy metals by the step of contacting the heavy metal containing gas, water, or soil with a multifunctional sequestration agent selected from the group consisting of bauxite and modified bauxite.
- 2. A process for treating gas, water, or soil with bauxite in its natural or relatively natural form.
 - 3. The process according to Claim 1, wherein the bauxite is modified by the steps of wetting with water, mild heating to temperatures below 300°C, and/or soaking in solutions of common acids, bases, or salts.
 - 4. The process according to Claim 1, wherein when bauxite is applied for treatment of gases, sulfur is an essential ingredient in the co-precipitation of pollutant metals as sulfides.

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- 5. The process according to Claim 1, wherein sulfur is present in the gas stream being treated or has been introduced into the treatment with the bauxite.
- 6. The process according to Claim 1, wherein when bauxite is applied to water or soil, sulfur is not an essential ingredient for removal of metal pollutants.
 - 7. The method according to Claim 1, wherein said multi-functional sequestration agent ore is formed into a permeable vertical barrier.

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- 8. The method according to Claim 1, wherein said multi-functional sequestration agent is formed into a permeable horizontal barrier or cap.
- 9. The method according to Claim 1, wherein said multi-functional sequestration agent is mixed with the environmental media to be cleaned.
 - 10. A method for removing or inactivating microorganisms in an emission or in the environment comprising contacting the microorganism with a mineral selected from bauxite, copper ores, and mixtures thereof.